

REMARKS

Claims 52-78, 80-82, 85-93 and 95-97 are pending in the application. Claims 52, 81, 82, 85 and 95 have been amended herein. New claims 96-97 have been added herein. Claims 82 and 95 have been revised to correct errors. Claim 85 has been revised to delete one of the elements and, instead, new claims 96 and 97 have been added. Support for the amendments to claims 52 and 81 is set forth below.

Applicants' Response to Claims Rejections under 35 U.S.C. §112

Claims 90-93 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. Regarding Examiner's assertion as to the operation of the CPU in claim 90, applicants respectfully refer to the following description concerning CPU 1763 at page 159 of the supplement specification:

“When a retarding voltage is found with a satisfactory charge-up state, this value is applied to the applying unit 1750 through the CPU 1763, or if values of optimal beam currents are found, the sample or wafer is evaluated with these values.”

Applicants respectfully submit that the above description supports the operation of the CPU, in claim 90. The Examiner asks at page 2 of the Office Action: “How can the disclosed unit for measuring the charged-up state function if the primary beam current was not fixed?”

Applicants respectfully respond that an image's quality increases as a primary current increase and a secondary current increase accordingly, but that an image's quality decreases as an increase of charge-up. As a result, an image quality has a maximum value as an increase in a primary current, because charge-up increases as an increase in the primary current. In other words the image quality has an optimum value. Applicants also note that the extent of charge-up can be determined on the basis of the extent of distortion of a photographed image. Since the

distortion becomes large at an end portion of an image, as shown in Fig. 49 [A], an extent of charge-up can be determined through image processing based on how large the distortion is.

Wherefore, the invention is enabled as claimed in claims 90-93.

Claims 81 stands rejected under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This claim has been amended to depend from claim 80, which is pending. In light of the amendments and above remarks, Applicants respectfully request favorable reconsideration and that the rejections be withdrawn.

Applicants' Response to Claims Rejections under 35 U.S.C. §103

Claims 52-54, 60, and 68-78 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamazaki et al. of Lo et al., Tabrizi et al., and Davis et al. In response thereto, applicants have amended claim 52 to more distinctly claim the subject matter regarded as the invention. Specifically, applicants have added a new limitation: "said electro-optical system including lens electrodes coated by metal having a large work function." Support for the amendment is found at pages 93 and 94 of the specification and FIG. 17.

Applicants respectfully submit that none of the cited references teach or suggest this limitation. The new limitation results in a number of advantages. The claimed lens is fabricated by plating, vapor depositing or sputtering a metal on a ceramic. Using such a lens makes it possible to integrate lenses and improve the accuracy. Such a lens is lightweight. If a surface of a lens electrode is coated by a metal having a large work function, for example, gold and platinum, less secondary electrons are emanated from an object and, thus, dielectric breakdown is less likely to occur.

Claims 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al., Lo et al., Tabrizi et al., and Davis et al. as applied to claims 52-54, 60, and 68-78 and further in view of Bachman. Claim 56 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamazaki et al., Lo et al., Tabrizi et al., Davis et al., and Bachman as applied to claim 55 and further in view of Abe et al. Claims 57-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al., Lo et al., Tabrizi et al., and Davis et al. as applied to claims 52-54, 60, and 68-78 and further in view of Watanabe et al. Claims 61, 62 and 65-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al., Lo et al., Tabrizi et al., and Davis et al. as applied to claims 52-54, 60, and 68-78 and further in view of Petric. Claim 63 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al., Lo et al., Tabrizi et al., Davis et al. and Petric as applied to claims 61, 62, and 65-67 and further in view of Lamattina et al. Claims 64 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al., Lo et al., Tabrizi et al., Davis et al. and Petric as applied to claims 61, 62 and 65-57 and further in view of Bisschops et al. Applicants respectfully submit that in light of the amendment to claim 52 discussed above, the foregoing rejections are likewise addressed by nature of their dependency thereto.

Claims 86-89 stand rejected under 35 U.S.C 103(a) as being unpatentable over Yamazaki et al., Lo et al., Tabrizi et al., and Davis et al. as applied to claims 52-54, 60, 68-78 and 86 and further in view of Livesay. Applicants respectfully submit that none of the cited references demonstrate gradual deepening of voltage to reach a predetermined value at a predetermined time so that an insulating layer is prevented from breakdown. Wherefore favorable reconsideration is requested.

Response under 37 C.F.R. §1.111
Attorney Docket No. 010816
Serial No. 09/891,612


In view of the aforementioned amendments and accompanying remarks, Applicants submit that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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